Resource Management Guide

Harrison-Crawford State Forest **Compartment: 23 Tract: 3**
Christine Martin **Date: 6/10**

Acres Commercial forest: 47
Acres Noncommercial Forest: 2
Acres Permanent Openings: 0
Acres Other:

Acres Total: 48

Average Site Index: 63

Basal Area ≥ 14 inches DBH: 56.8 sq.ft./acre
Basal Area < 14 inches DBH: 39.4 sq.ft./acre
Basal Area Culls: 2.4 sq.ft./acre
Total Basal Area: 98.6 sq.ft./acre

Number Trees/Acre: 320

Stocking Level : Fully Stocked (93%)

Calculated annual Growth (bd. ft.): 250bd.ft/acre/year

Species	Harvest	Leave	Total
White Oak	3130	52520	55650
Yellow Poplar	27800	12880	40680
Northern Red Oak	6280	32390	38670
White Ash	17890	19720	37610
Pignut Hickory	5120	19510	24620
Sugar Maple	5250	16260	21510
Black Oak	2520	6800	9320
American Beech	1710	7190	8900
Scarlet Oak	0	3640	3640
Basswood	0	3580	3580
Black Walnut	0	850	850
Hardwood Total	**69700**	**175340**	**245030**
Eastern Redcedar	0	3310	3310
Tract Total	**69700**	**178650**	**248340**
Total/acre	**1452**	**3721**	**5173**

Location

This tract is located in Harrison county Indiana, Sec 7, 6, T4S, R3E.

General Description

There are three different stand types on this tract. There is the mixed hardwood stand which is found along the drainages and is comprised of 19 acres. There are two acres of the cedar stand found in the north eastern section of this tract. The oak-hickory section is the largest stand on this tract. The stand consists of 28 acres.

History

This tract was acquired in two different sections. The first section was acquired in 1935 which was approximately 15 acres. The second section which was approximately 30 acres was acquired in 1939.

The last inventory was performed in 1973. The inventory states that there was 78 square feet of basal are per acre.

There was a timber harvest in this stand with tract 2307 in 1981. Red oak was the main species removed with this sale. From both these tracts there was a total of 108,987 Doyle board feet removed from the sale.

Landscape Context

The main land use surrounding this tract is forest cover. There are private dwellings that are within one mile of this tract. There is also pastureland and hay fields in close proximity of this tract. This tract is mostly surrounded by Harrison Crawford State Forest.

Topography, Geology, and Hydrology

This tract is an east facing slope. There are two drainages which comprise the north and south boundaries to this tract. These drainages will eventually flow into Indian Creek.

Soils

Corydon Stony Silt Loam (CoF) Shallow, moderately steep to very steep, well-drained, stony soils on uplands. Surface layer is about 3 inches. Subsurface is about 6 inches thick. Subsoil about 9 inches thick. The depth to hard limestone bedrock is about 18 inches. High in organic matter and low in natural fertility. Runoff is rapid or very rapid. Soil type is characterized by limestone outcrops, with as much as 15% on benches which are deeper than 20 inches to bedrock.
Degree Slope: 20-60 %
Woodland Suitability Group: 3d7
Site Index: 65-75 (Upland oaks)
Growth range potential (Upland oaks): 155-220
Management concerns: Runoff and erosion

Crider Silt Loam (CrB2, CrC2, CsB3, CsC3, CtC2) Deep, gently sloping and moderately sloping well-drained soils on uplands. Surface layer is dark-brown silt loam about 8 inches thick. Subsoil is about 62 inches thick. Moderate in content of organic matter and in natural fertility. Available water capacity is high and permeability is moderate. Typically, these soils are eroded. Runoff is medium to rapid.
Degree Slope: 2-12%
Woodland Suitability Group: 1o1
Site Index: 85-95 (Upland Oaks)
Growth range potential (Upland oaks): 300-375 bd.ft./acre/year
Management Concerns: Runoff and erosion

Gilpin Silt Loam (GlD2, GlD3, GlE2, GpF) Moderately deep, strongly sloping to steep, well-drained soils. Surface layer is very dark grayish-brown silt loam about 3 inches thick. Subsurface layer is pale brown silt loam about 9 inches thick. Subsoil is about 17 inches thick. Depth to hard sandstone and shale bedrock is about 29 inches. Moderate in organic matter. Available water capacity is low and permeability is moderate. Runoff is rapid to very rapid.
Degree Slope: 12-30 %
Woodland Suitability Group: 3o10 or 3r12
Growth range potential (Upland oaks): 185-260 bd.ft./acre/year
Site Index: 70-80
Management Concerns: Runoff and erosion

Hagerstown Silt Loam (HaC2, HaD2, HgC3, HgD3, HgE3) Deep, moderately sloping to moderately steep, well-drained soils on uplands. Surface layer is dark yellowish brown silt loam about 6 inches thick. The subsoil is about 46 inches thick. The depth to limestone is about 52 inches. Characteristically, this soil is eroded to severely eroded. Moderate in content of organic matter and medium in natural fertility. Available water capacity is moderate or high, and permeability is moderate. Runoff is rapid to very rapid.
Degree Slope: 6-25 %
Woodland Suitability Group: 1o1 or 1r2
Site Index: 85-95 (Upland Oaks)
Growth range potential (Upland oaks): 300-375 bd.ft. /acre/year
Management Concerns: Runoff and erosion

Haymond Silt Loam (Hm) Deep, nearly level, well-drained soils on bottom lands and in basins of sinkholes in uplands. Surface layer is dark-brown about 9 inches thick. Subsoil dark yellowish-brown about 17 inches thick. Underlying material is dark yellowish-brown stratified silt loam that contains less prominent layers of loam. Moderate in content of organic matter. Available water capacity is high, and permeability is moderate. Runoff is slow.
Degree Slope: 0%
Woodland Suitability Group: 1o8
Site Index: (95-105- no rating for upland oaks)
Growth range potential (Tulip poplar-no rating for oaks): 375-450 bd.ft./acre/year
Management Concerns: Flooding between December and June

Tilsit Silt Loam (TlB2) Deep, gently sloping, modrately well drained soils on uplands. Fragipan in the lower part of the subsoil. Surface layer is dark yellowish-brown silt loam about 8 inches thick. Subsoil is about 38 inches thick. Depth to interbedded shale and sandstone bedrock is about 66 inches. Moderate in content of organic matter and low in natural fertility. Available water capacity is moderate and permeability is very slow. Runoff is medium.
Degree Slope: 2-6 %
Woodland Suitability Group: 3d9
Site Index: 70-80 (Upland Oaks)
Growth range potential (Upland oaks): 185-260 bd.ft./acre/year
Management Concerns: Erosion, wetness early in spring, available water capacity, lack of moisture in mid and late summer if rainfall is below normal.

Access

There is not any direct road access to this tract. It is accessible by the adventure hiking trail. The first way to access the tract is to park off of Old Forest Road and hike south along the Adventure Hiking Trail. The second way to get to this tract is to use the firelane off the end of Kininter road, park in the wildlife opening on the ridge top, and hike north on the Adventure Hiking Trail.

This firelane off of Kinitner Road needs to be repaired in places in order to make it accessible by vehicle. There is a place on the ridge where the roadbed is starting to sink; this will have to be repaired to prevent further degradation of the road. The current road needs ditch work and more water diversion devices to be installed. This road will also need rock placed on it to be accessible for winter logging.

Boundary

The north and south boundaries are comprised of drainages. The west and east boundaries are both private property. There is some old fence that marks off the west boundary line. There was no evidence found that marks off the east boundary line. There is a corner stone that is in tract 2307 which is at the south end of the east line.

Wildlife

Indiana Bat

Timber harvest activities may have both positive and negative effects on the Indiana bat. While undetected but occupied roost trees could be cut during spring, summer or fall, the probability of disturbance or direct injury or death to bats is extremely small. Timber harvest could create conditions that are beneficial to Indiana bats. Roads and/or skid trails provide improved canopy foraging conditions by reducing clutter. Roosting habitat could also be improved by reducing clutter around roost trees. Edges of log landings and regeneration openings could provide roost trees with improved solar exposure, thus improving microclimate/thermal conditions for roosting areas. This would improve reproductive success and fitness, contributing to local population stability or increase. In cases of maternity trees this could provide conditions that increase growth and activity rates of young bats, leading to reduced time for parental care.

Suitable roost trees such as large diameter snags or live trees with loose or exfoliating bark will be retained in sufficient numbers to provide continuing roosting habitat for the Indiana bat

According to the inventory of this tract there are a sufficient number of live trees per acre to support a timber harvest and still meet the requirements for the Indiana Bat Habitat Guideline. The inventory shows that there are an insufficient number of snags on this tract required for the bat. If it is decided that there should be more snag trees for the bat, a post- harvest TSI could generate the snags needed. This could be done by girdling the cull trees, especially the ones with the desirable bark characteristics.

Ecological resource guide discussions

The proposed management activities in this tract are a timber harvest, road building, and timber stand improvement. These are the activities that can alter the habitat present for the wildlife.

The harvest will affect the understory vegetation in the short term. Trees are removed thereby letting more sunlight hit the forest floor, creating more understory vegetation growth. As time passes the trees in the overstory will grow and overtake these holes in the canopy so therefore there is a decrease of light hitting the forest floor. The decreased light creates a decrease in understory vegetation growth. Approximately 5 years after the harvest the vegetation is what it was before the harvest took place.

The harvest will also provide more habitat for some wildlife. There will be more coarse woody debris on the ground after the harvest. This large amount of down material is great habitat for wildlife.

This harvest should not affect any travel corridors or drastically alter the covertypes of the area. The method used in this harvest will be single tree selection. There may be areas of regeneration openings that may exceed 5 acres in size. These openings will not overall affect the continuity of the forest. These regeneration areas will provide habitat for wildlife.

The timber stand improvement should have minimal affect on overall forest continuity.

There were a few karst features found in this tract. Most of these features were minor sinkholes. These karst features show that there is an underground water system in place. These karst features will be buffered if a harvest is to take place.

Recreation

The Adventure Hiking Trail runs through this tract. This section of the trail is a heavily used part of the hiking trail. There were many small ailanthus sprouts found along the adventure hiking trail. This ailanthus along this trail should be treated.

There is an old illegal ATV trail that runs from private property off the east side of the tract into state property. This ATV trail does not look like it has been used in the past couple years.

Cultural

There were no cultural sites observed on this tract.

Summary Tract Silvicultural Description, Prescription and Proposed Activities

Mixed Hardwoods

There is a total of 98 square feet of basal area per acre in this stand type. There are 81,000 Doyle board feet total in this stand. If there is a harvest in this stand there would be about 10 square feet of basal area per acre and approximately 17,000 Doyle board feet removed.

This stand is 19 acres in size. It is found along the drainages of this tract. The main species in this stand type are yellow poplar and white ash. The diameter in this stand is around 16inches. The regeneration in this stand is of sugar maple and American beech.

This stand could use an improvement harvest. There are some dying black cherries that would improve the overall stand health when removed. There will need to be some treatments of ailanthus before a harvest can take place.

There were some pockets of ailanthus found in this stand type. The first was found in the drainage on the west side of the tract. The neighbor has many ailanthus trees growing in the cow pasture adjacent to this tract. He also has some paulownia trees growing in association with the ailanthus trees.

There is another patch of ailanthus located on the north slope of the tract. These ailanthus trees average 6-8 inches in diameter. There are many smaller sprouts growing in conjunction with the larger ailanthus trees. There was also some Japanese honeysuckle growing in this ailanthus patch as well.

Cedar

This stand has approximately 72 square feet of basal area per acre. There is 2,000 Doyle board feet in total on this stand.

This stand is found in the north east section of this tract. There is 2 acres that comprise this tract. The trees found in this stand are of small sawtimber and pole timber. There are mainly American beech poles throughout this stand. There are some black oak trees that should be released.

Oak-Hickory

There is a total of 102 square feet of basal area per acre on this tract. There are approximately 180,000 Doyle board feet total in this stand type.

This stand is the largest stand on this tract. There are 28 acres in this stand type on this tract. The main species are white and red oaks. The main regeneration in this stand is of sugar maple and American beech.

This stand could use an improvement harvest. There are some mature black oaks that should be removed. There are also some yellow poplars that are in decline. These trees should be removed to improve the overall vigor of the stand. There are also many large diameter white ashes that should be thinned out for the oncoming threat of the emerald ash borer.

There are some scattered patches of ailanthus that are growing in areas of old blow down. These areas should be monitored and there should be some treatment in order to remove the ailanthus form the area.

Proposed Activities Listing

2010- treat the ailanthus

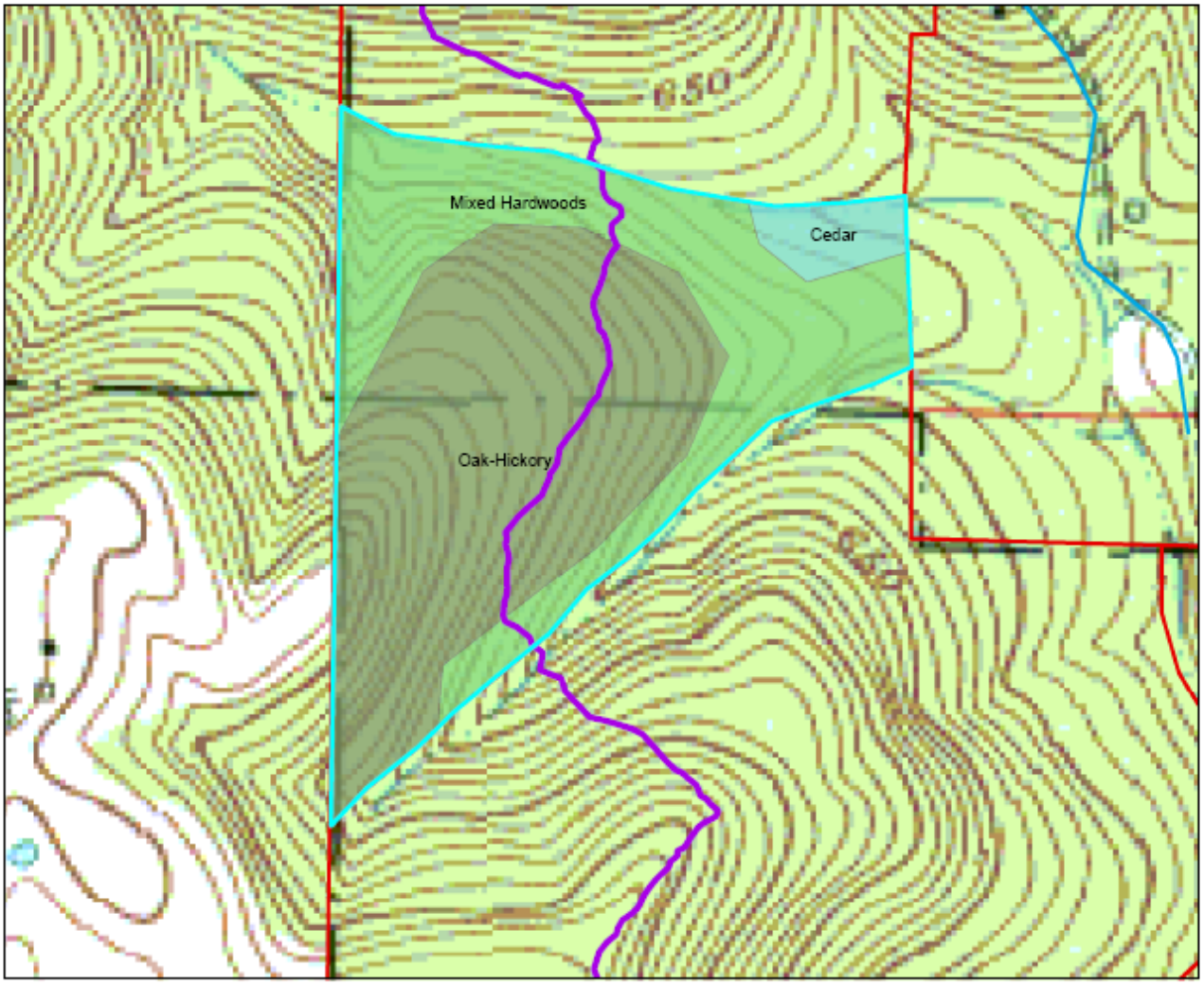
2012- timber harvest

2013- check for more ailanthus sprouts and re treat is necessary

To submit a comment on this document, click on the following link:
http://www.in.gov/surveytool/public/survey.php?name=dnr_forestry

You **must** indicate State Forest Name, Compartment Number and Tract Number in the "Subject or file reference" line to ensure that your comment receives appropriate consideration. Comments received within 30 days of posting will be considered.

Stand Map
Compartment 23 Tract 3
T4S R3E 6,7



Stand Types

- Cedar
- Mixed Hardwoods
- Oak-Hickory

Legend

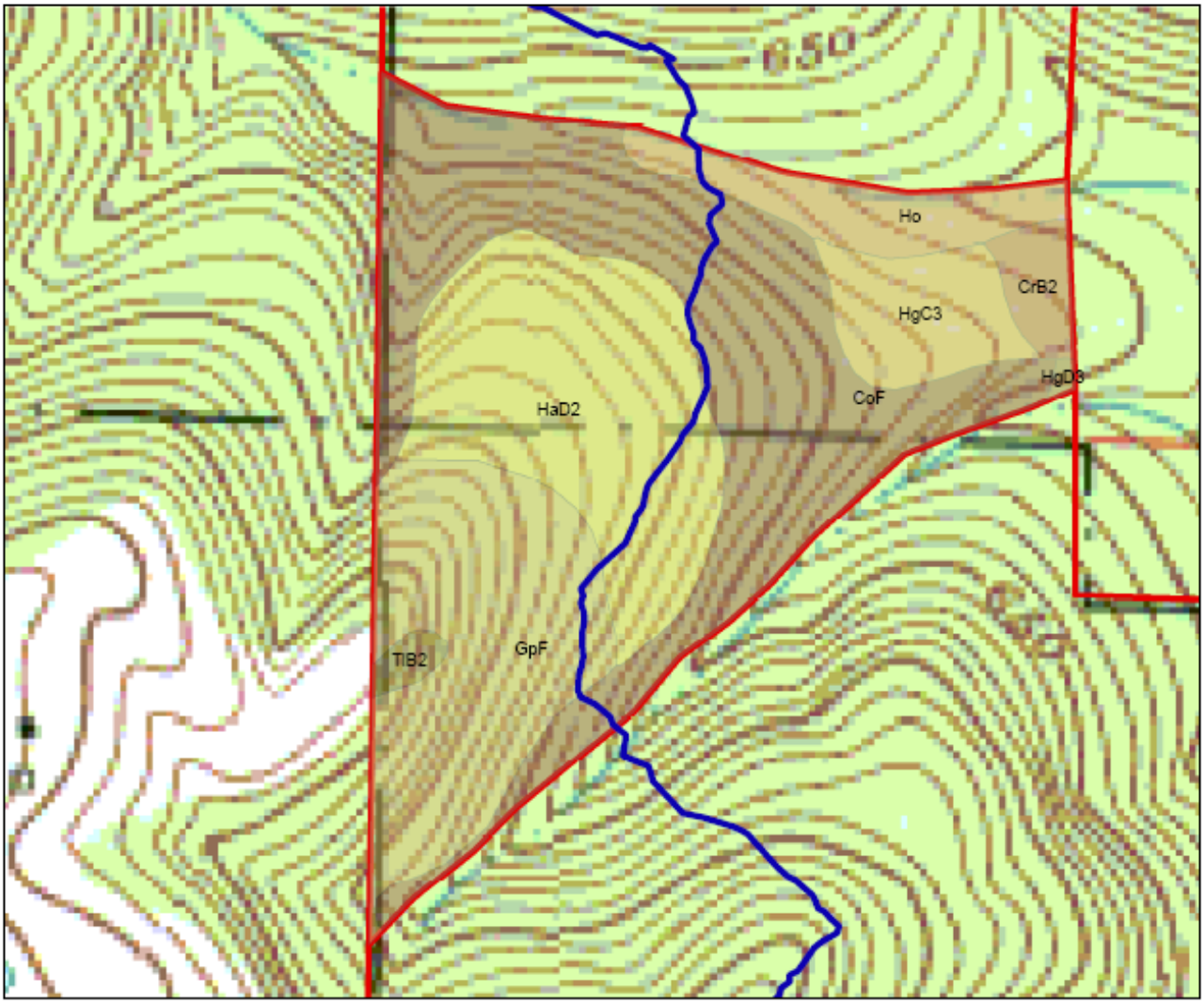
- Adventure Hiking Trail
- HCSF Tracts

N

Feet

0 255 510 1,020 1,530 2,040

Soil Map
Compartment 23 Tract 3



Legend

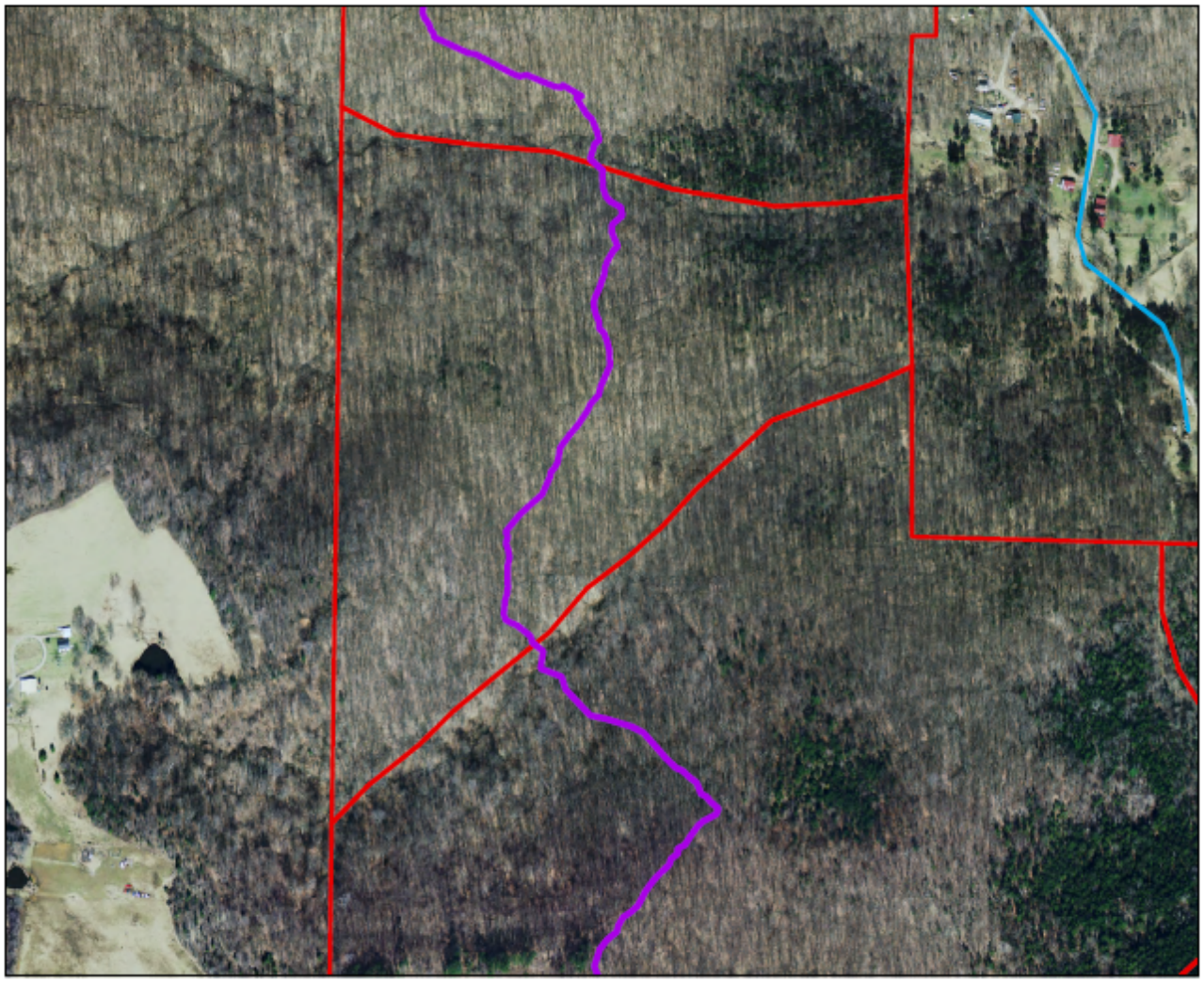
Adventure Hiking Trail

MUSYM

CoF	HgC3
CrB2	HgD3
GpF	Ho
HaD2	TlB2

0 230 460 920 1,380 1,840 Feet

Air Photo
Compartment 23 Tract 3
T4S R3E 6,7



Legend

Adventure Hiking Trail

HCSF Tracts

N

Feet

0 255 510 1,020 1,530 2,040